

# Prevalence of female sexual dysfunction among Indian fertile females

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## ABSTRACT

**Background:** Female sexual dysfunction (FSD) is described as difficulty experienced by a female during any stage of a normal sexual activity including physical pleasure, desire, arousal, or orgasm. There are various factors responsible for FSD including psychological status of a person, gynecological or medical problems, long use of certain drugs, and social beliefs.

**Objectives:** To study the prevalence and various factors associated with FSD.

**Materials and Methods: Study Design** - This study design was a cross-sectional observational study conducted at Tertiary Care Centre, in Ahmedabad from June 2015 to March 2016. **Sample Size** - One hundred and fifty-three fertile females in reproductive age group (20–47 years) were included in the study. Written and informed consent was obtained from all the females. **Methods** - FSD was assessed with a detailed 19-item female sexual function index questionnaire. All six domains of sexual dysfunction, i.e., desire, arousal, lubrication, orgasm, satisfaction, and pain were studied. Various associated factors such as gynecological or psychological problems were also studied. **Exclusion** - Infertile patients were excluded from the study.

**Results:** The prevalence of FSD was 55.55% among 153 fertile females. FSD was more prevalent in the age group of 26–30 years and with duration of marriage >16 years. FSD was also more common in females with middle education and those belonging to upper middle socioeconomic status. Psychological stress was significantly associated with FSD.

**Conclusion:** It is right of every female to lead healthy sexual life as it is key to happiness in marriage. Females with FSD can be managed with proper counseling and treating the underlying etiology.

**Key Words:** Female sexual dysfunction, female sexual function index, fertile females, psychological stress

## INTRODUCTION

Female sexual dysfunction (FSD) is described as difficulty experienced by a female during any stage of a normal sexual activity including physical pleasure, desire, arousal,

or orgasm.<sup>[1]</sup> There are various factors responsible for FSD including psychological status of a person, gynecological or medical problems, long use of certain drugs, and social beliefs.<sup>[2]</sup> All these factors are often interlinked. There are many studies on the prevalence of FSD among general and infertile population, but no data are available on the prevalence of FSD in fertile females. The main aim of this study is to calculate prevalence and highlight the possible etiology of FSD in fertile females.

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## MATERIALS AND METHODS

This is a cross-sectional observational study conducted in Department of Obstetrics and Gynaecology at Institute of Kidney Disease and Research Centre, Institute of Transplantation Sciences, Ahmedabad from June 1, 2016, to March 31, 2016.

### Inclusion criteria

Fertile females who had one or more children and in reproductive age group (20–47 years) attending Obstetrics and Gynecology OPD were included in this study.

### Methods

FSD was assessed with a detailed 19-item female sexual function index (FSFI) questionnaire. Written and Informed consent was obtained from all females. FSFI pro forma was given to females according to their preferred language (Hindi, English, and Gujarati). Pro forma was pilot tested for cultural appropriateness and linguistic accuracy. Illiterate women were interviewed in person. All six domains of sexual dysfunction, i.e., desire, arousal, lubrication, orgasm, satisfaction, and pain were studied. In addition to prevalence of FSD among these females, various factors such as duration of marriage, gynecological disorders, medical disorders, and psychological factors and their association with FSD were studied.

### Exclusion criteria

Infertile patients were excluded from the study.

### Female sexual function index

It is a 19-item questionnaire, which is a brief, multidimensional, self-report instrument for assessing different domains of female sexual function.<sup>[3]</sup> It provides scores on six domains of sexual function: desire, arousal, lubrication, orgasm, satisfaction, and pain, as well as a total score.<sup>[4]</sup> Response to each question relates to previous 4-week sexual activity and are scored from 0 (no sexual activity), 1 (indicative of dysfunction) to 5 (suggestive of normal sexual activity). Individual domain scores are obtained by adding the scores of the individual questions that comprise the domain and multiplying the sum by the domain factor provided in the FSFI for each domain. The total score is obtained by adding scores of all domains. The score varies from 2 (minimum) to 36 (maximum). As obtained from a validation study, score  $\leq 26.55$  is classified as FSD.<sup>[4]</sup>

### Data analysis

All collected data were entered into the SPSS version 20 (Statistical package for the social sciences manufactured by IBM) and analysis has been conducted. Continuous data are expressed as mean  $\pm$  standard deviation form while noncontinuous data are countable and are expressed

as percentages or numbers. Continuous data follow both normal distribution and nonnormal distribution. Independent *t*-test and Mann–Whitney U-test have been used for carrying out the significant value. For noncontinuous data, Chi-square and Fisher's exact test have been used for carrying out the significant value.  $P < 0.05^*$  shows statistically significant value. NS represents nonsignificant difference between the groups.

\*Represents significant difference between the groups.

## RESULTS

There were 153 fertile females who were included in this study. The mean age of females being  $32.42 \pm 7.38$  years and the mean duration of marriage was  $11.23 \pm 8.39$  years. The prevalence of FSD among fertile females was 55.55%. The prevalence of FSD in various age groups was studied [Table 1]. It was found that FSD was more prevalent in 26–30 years age group and  $\geq 41$  years of age group.

Various demographic factors such as education, occupation, socioeconomic status, and duration of marriage were studied with respect to prevalence of FSD [Table 2]. FSD was more common in females with middle education. It was also observed that FSD was more prevalent in females with duration of marriage  $>16$  years.

The mean score of FSD and various domains of FSD were calculated in both groups of patients, those with FSD and those without FSD [Table 3].

The various type of sexual dysfunction was studied [Table 4]. It was observed that arousal dysfunction was most common followed by desire and pain dysfunction.

Effect of gynecological disorder on sexual life was studied [Table 5]. Many gynecological disorders such as adenomyosis, endometriosis, uterine prolapse, and pelvic inflammatory diseases (PID) are associated with FSD. In our study, a number of patients suffering from these disorders were less; hence, it was statistically not significant.

**Table 1: Prevalence of female sexual dysfunction in various age group**

Age group (years)	FSD present, n=85 (%)	FSD absent, n=68 (%)	P
$\leq 25$	16 (18.82)	12 (17.65)	0.86 (NS)
26-30	20 (23.53)	33 (48.53)	$<0.01^*$
31-35	13 (15.29)	11 (16.18)	0.89 (NS)
36-40	19 (22.35)	9 (13.24)	0.15 (NS)
$\geq 41$	17 (20)	3 (4.41)	$<0.01^*$

\* $P < 0.01$ . FSD: Female sexual dysfunction, NS: Not significant

The association between medical disorders such as thyroid disorders, hypertension, diabetes, pelvic and pulmonary tuberculosis, and FSD were studied [Table 6]. Although

**Table 2: Various demographic factors and female sexual dysfunction**

Demographic variables	FSD present, n=85 (%)	FSD absent, n=68 (%)	P
Education status			
Illiterate	6 (7.06)	4 (5.88)	1.00 (NS)
Primary education	3 (3.53)	3 (4.41)	1.00 (NS)
Middle education	42 (49.41)	29 (42.65)	0.40 (NS)
Secondary education	16 (18.82)	14 (20.59)	0.79 (NS)
Graduate and PG	18 (21.18)	18 (26.47)	0.44 (NS)
Occupation			
Housewife	22 (26.19)	16 (23.53)	0.84 (NS)
Working	62 (73.81)	52 (76.47)	
Socioeconomic status			
Upper	5 (5.88)	4 (5.88)	1.00 (NS)
Upper middle	31 (36.47)	34 (50)	0.09 (NS)
Lower middle	36 (42.35)	25 (36.76)	0.48 (NS)
Lower	13 (15.29)	5 (7.35)	0.13 (NS)
Duration of marriage (years)			
≤5	22 (25.88)	23 (33.82)	0.28 (NS)
6-10	17 (20)	25 (36.76)	0.02*
11-15	12 (14.11)	11 (16.18)	0.72 (NS)
≥16	34 (40)	9 (13.24)	<0.01*

\*P<0.01. FSD: Female sexual dysfunction, NS: Not significant

**Table 3: Mean score of various domains of female sexual dysfunction**

Mean score	FSD present (n=85)	FSD absent (n=68)	P
Mean FSD score	22.66±3.65	30.31±2.32	<0.01*
Mean desire score	2.94±0.92	4.31±0.85	<0.01*
Mean arousal score	3.58±0.91	4.77±0.63	<0.01*
Mean lubrication score	4.34±1.11	5.21±0.76	<0.01*
Mean orgasm score	4.07±1.12	5.24±0.59	<0.01*
Mean satisfaction score	3.96±1.47	5.74±0.42	<0.01*
Mean pain score	3.78±1.40	5.04±1.02	<0.01*

\*P<0.01. FSD: Female sexual dysfunction

**Table 4: Types of sexual dysfunction**

Type of dysfunction	FSD present, n=85 (%)	FSD absent, n=68 (%)	P
Desire	73 (85.88)	24 (35.29)	<0.01*
Arousal	78 (91.76)	39 (57.35)	<0.01*
Lubrication	71 (83.53)	33 (48.53)	<0.01*
Orgasm	70 (82.35)	20 (29.41)	<0.01*
Satisfaction	61 (71.76)	9 (13.24)	<0.01*
Pain	73 (85.88)	37 (54.41)	<0.01*

\*P<0.01. FSD: Female sexual dysfunction

results were not statistically significant, these disorders do have an impact on individual's sexual life.

Present psychological status of a couple plays an important role in their sexual life. Effect of psychological status in the form of stress, depression, anxiety, and interpersonal conflicts on sexual function was studied [Table 7]. It was observed that these conditions were significantly associated with FSD.

The effect of surgeries such as hysterectomy and transobturator tape (TOT) on sexual function was studied [Table 8].

## DISCUSSION

Sexuality is a part of individual's personality, which is influenced by various factors such as gynecological disorders, medical disorders, psychological state, and some drugs.<sup>[2]</sup> Most of the Indian women consider intercourse as a way to reproduce only. In 2001, Berman *et al.* found

**Table 5: Gynecological disorders and female sexual dysfunction**

Gynecological disorders	FSD present, n=85 (%)	FSD absent, n=68 (%)	P
Adenomyosis	7 (8.24)	1 (1.47)	0.08 (NS)
PID	6 (7.06)	1 (1.47)	0.13 (NS)
Uterine fibroid	5 (5.88)	2 (2.94)	0.46 (NS)
Endometriosis	4 (4.71)	1 (1.47)	0.38 (NS)
Uterine prolapse	3 (3.53)	2 (2.94)	1.00 (NS)
SUI	3 (3.53)	2 (2.94)	1.00 (NS)
None	57 (67.06)	59 (86.76)	<0.01*

\*P<0.01. FSD: Female sexual dysfunction, NS: Not significant, PID: Pelvic inflammatory diseases, SUI: Stress urinary incontinence

**Table 6: Medical disorders and female sexual dysfunction**

Medical disorder	FSD present, n=85 (%)	FSD absent, n=68 (%)	P
Thyroid disorder	9 (10.59)	5 (7.35)	0.49 (NS)
Hypertension	6 (7.06)	3 (4.41)	0.73 (NS)
Pelvic tuberculosis	3 (3.53)	0	0.25 (NS)
Pulmonary tuberculosis	1 (1.18)	0	1.00 (NS)
Diabetes	2 (2.35)	0	0.50 (NS)
None	64 (75.29)	60 (88.24)	0.04*

\*P<0.01. FSD: Female sexual dysfunction, NS: Not significant

**Table 7: Effect of psychological stress on female sexual dysfunction**

	FSD present, n=85 (%)	FSD absent, n=68 (%)	P
Psychological problem	29 (34.12)	13 (19.12)	0.04*
None	58 (68.24)	55 (80.88)	0.08 (NS)

\*P<0.01. FSD: Female sexual dysfunction, NS: Not significant

**Table 8: Effect of surgery on female sexual dysfunction**

Surgery	FSD present, n=85 (%)	FSD absent, n=68 (%)	P
Hysterectomy	8 (9.41)	1 (1.47)	0.08 (NS)
TOT	3 (3.53)	0	0.25 (NS)

FSD: Female sexual dysfunction, NS: Not significant, TOT: Transobturator tape

that with an increase in age, FSD also increases.<sup>[5]</sup> This maybe due to decline in hormones with increasing age head toward menopause. Urogenital atrophy occurring in menopause is associated with arousal disorder.<sup>[6]</sup> In our study, FSD was found to be more prevalent in women in reproductive age group of 26–30 years, which is similar to a study by Fajewonyomi *et al.*<sup>[7]</sup> However, effect of aging on sexual life depends on other coexisting factors such as psychological, medical illness, and drugs.<sup>[8]</sup>

Women's education and socioeconomic status do play a role in her outlook toward sexual life. In a study by Fajewonyomi *et al.*, they found that FSD was more prevalent in women with higher education (43.4%) as compared to women with no formal education (7.3%).<sup>[7]</sup> In our study too, FSD in illiterate women was 7.06% and in women with middle education was 49.41%. This variation may be because educated women are more frank in discussing about their sexual problems with their spouse and have more awareness about this issue.<sup>[9]</sup> This same holds with women of different socioeconomic status where the prevalence of FSD was more in females with upper middle status (36.47%) as compared to lower socioeconomic status (15.29%). The duration of marriage has a negative impact on sexual life. FSD was present in 40% of patients with duration of marriage >16 years. It may be supported by the theory that with an increase in duration of marriage, there is a decrease in frequency of intercourse leading to satisfaction disorder.<sup>[10]</sup>

Sexual pain disorders can be due to dyspareunia or vaginismus.<sup>[11]</sup> Dyspareunia is associated with deep infiltrating lesions of pelvic disease such as endometriosis and PID. Sexual pain disorders can be treated depending on the underlying cause responsible for the pain. Women with desire disorders are difficult to treat. Use of testosterone<sup>[12]</sup> and estrogen replacement therapy has shown good results in these patients.<sup>[13]</sup> Patients with arousal disorders can be encouraged to increase foreplay duration or use of vibrators to increase stimulation.<sup>[2]</sup>

Various gynecological disorders such as PID, endometriosis, and retroverted uteri are associated with pain sexual disorder. It is still unclear whether uterine fibroid and adenomyosis can cause dyspareunia.<sup>[14]</sup> However, a fundal fibroid can be the cause of discomfort during intercourse.<sup>[15]</sup> Pelvic organ prolapse and urinary incontinence also affect

sexual life.<sup>[16]</sup> Among medical conditions, diabetes, thyroid disorders,<sup>[17]</sup> and hypertension<sup>[18]</sup> are also associated with FSD.

Operative procedure such as hysterectomy has a negative impact on women's sexuality. Uterus which is a part of femininity is lost resulting in low confidence.<sup>[2]</sup> On the other hand, TOT procedure does not affect sexual life.<sup>[19]</sup>

Most of the females are passive partner in their sexual life. They need to be motivated for intercourse which is largely influenced by the status of their interpersonal conflicts and intimacy.<sup>[7]</sup> Presence of components of stress, depression, anxiety, and conflicts can have a negative impact on their personal as well as on their sexual life. Hence, it is important to identify such compounding factors ranging from age to psychological stress, while dealing with FSD.

There are many studies on prevalence of FSD in general population and infertility, but there is no study on FSD among fertile women. The prevalence of FSD was 55.55% which is significant. FSD not only affects the quality of life but also can affect individual's personality too.

## CONCLUSION

FSD is prevalent in fertile females as much as in infertile females and is often overlooked. The main cause of FSD in these females is psychological stress. FSD is poorly understood or rather ignored in Indian female population, especially in illiterate and low socioeconomic class. These females end up in being silent sufferers of FSD. It is important to address and discuss this issue with couples to overcome their inhibitions and help them to lead healthy sexual life. The management of this condition requires equal participation of couple, gynecologist, and psychiatrist.

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## Conflicts of interest

There are no conflicts of interest.

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